**The Ambiguous Case of the Sine Law**

Goal: To investigate the ambiguous case of the sine law.

Instructions: You will use the GeoGebra applet [**Law of Sines: Ambiguous Case**](http://www.geogebratube.org/student/m69990)for this activity. (To use the tool, follow instructions provided with the applet.)

Task: Construct as many triangles as possible with the given information:

*b = 8 cm, h = 4 cm* and < A = 30º. Change the length of side *a* as indicated in the boxes below. Complete the table by:

1. Starting with *a =* 12 cm.
2. State the relationship between *a, b and h.*
3. Take a print screen of your triangle and paste it into the space provided.
4. Change the value of side *a* and repeat the steps above.

The first one has been done for you.

*Hint: There are more than 10 triangles*.

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| *a =* 12 cm  *a > b and a > h* | *a =* 11 cm  *a \_\_\_\_ b and a \_\_\_\_h* |
| *a =* 10 cm  *a \_\_\_\_ b and a \_\_\_\_h* | *a =* 9 cm  *a \_\_\_\_ b and a \_\_\_\_h* |
| *a =*  8 cm  *a \_\_\_\_ b and a \_\_\_\_h* | *a = 7* cm  *a \_\_\_\_ b and a \_\_\_\_h* |
| *a = 6* cm  *a \_\_\_\_ b and a \_\_\_\_h* | *a = 5* cm  *a \_\_\_\_ b and a \_\_\_\_h* |
| *a = 4 c*m  *a \_\_\_\_ b and a \_\_\_\_h* | *a = 3* cm  *a \_\_\_\_ b and a \_\_\_\_h* |
| *a =* \_\_\_\_cm  *a \_\_\_\_ b and a \_\_\_\_h* | *a =* \_\_\_\_cm  *a \_\_\_\_ b and a \_\_\_\_h* |
| *a =* \_\_\_\_cm  *a \_\_\_\_ b and a \_\_\_\_h* | *a =* \_\_\_\_cm  *a \_\_\_\_ b and a \_\_\_\_h* |